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UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

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PLANS

*Inyo*

1907

Timber Management - ~~Inyo~~

~~Mono Lake~~ - Owens River W. Circle

**TRANSFERRED**

REPORT ON A WORKING PLAN FOR

SIERRA (EAST) NATIONAL FOREST

Ts. 1,2,3 S., Rs. 26, 27, 28 E.



**TIMBER MANAGEMENT  
FILE COPY**

I. F. ELDREDGE

Forest Assistant, Forest Service

**TIMBER MANAGEMENT  
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Mono. Reconnaissance

See map index  
for map which  
accompanied this  
report.

## REPORT

ON A

WORKING PLAN FOR SIERRA (EAST) NATIONAL FOREST  
TOWNSHIPS 1, 2, 3 S, RANGES 26, 27, 28 E

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By

I. F. ELDRIDGE

Forest Assistant, Forest Service

1907



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## MONO LAKE TRACT

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The Forest described in the following report covers an area of approximately 50,728 acres, of which about 40,164 acres contain merchantable timber. The tract is situated in the northern ends of the Sierra (E) and Inyo National Forests on the eastern slope of the Sierra Nevadas. It comprises probably 85 per cent of the total stand of merchantable timber on these National Forests, and is the only large body of accessible merchantable timber on the eastern slope of the Sierra Nevadas south of the Truckee country.

The timber is situated at an average elevation of 7,000 feet and is surrounded on the north, east, and south by a desert, and on the west by the main crest of the Sierras. The country is largely of a volcanic formation. The surface of the ground is covered with pumice stone and several large lava flows and extinct volcanic craters are found. In general the surface is smooth and even with rolling hills and shallow gulches.

The drainage is partly to the north to Mono Lake through several small streams and partly to the south and east through Glass, Deadman, Dry, and Mammoth creeks into Owens River.

The forest is composed of three distinct types in which the species forming the type occur in almost pure



stands. The types are: Yellow pine type, lodgepole pine type, and red fir type (California red fir.) Of these the yellow pine type is commercially and silviculturally the most important. It covers about 88 per cent of the total area. The lodgepole pine type covers about 7 per cent of the area and the fir type covers about 5 per cent of the area.

### Yellow Pine Type

This type is composed of an almost pure stand of yellow and Jeffrey pine and occurs over the whole tract, except on the moister exposures where the lodgepole pine type is found and at the higher elevations where the red fir type prevails. The stand is open with little or no underbrush. The trees average about 95 feet in height and about 34 inches in diameter breasthigh, with an average merchantable height of about 60 feet. There is an unusually small amount of damage from fire, insects, or fungi.

Reproduction in this type as in the other types is rather scanty, though judging from the present condition of neighboring cut-over lands there is no doubt that generous reproduction will take place when this tract is cut over.

### Red Fir Type

The red fir type occurs on the higher elevations where the soil and moisture conditions are best. The forest



is not as open as in the yellow pine type; the trees are large in diameter, quite tall, and clear boled. There is very little evidence of unsoundness, or of any damage from fire, insects, or fungi.

Reproduction in this type is not particularly good, though it is perhaps better than that in the other types.

### Lodgepole Pine Type

Commercially the lodgepole pine type is unimportant except as a cordwood or mining timber proposition. It occurs only in the places where yellow pine is unable, either through very poor soil or through an excessive amount of soil moisture, to obtain foothold. The trees are small, short, and have but little clear hright, besides being much damaged through fungi and other causes. It is not believed that any of the other species can be made to occupy the areas now covered by the lodgepole.

The present reproduction of this type is uniformly poor.

### Accessibility

There are at present three possible outlets for this timber: one to Bodie, Cal., a decadent mining town about 30 miles north of this tract, connected by a narrow gauge railway; one to Bishop, Cal., and other towns in Owens Valley about 55 miles to the south with no railroad connection; and one to the mining camps of Tonopah and Goldfield, Nevada.



There is no railroad connection nearer than 30 miles with the two last-named places, but there is a bare probability of a branch being built by the Southern Pacific which will connect this tract with the mining towns.

The market for timber in Bodie is confined largely to cordwood and mining timbers and is now being supplied by the Mono Lake Railroad and Lumber Co., whose mill is situated at the extreme northern edge of this body of timber, and who own approximately 8,000 acres of which a large part has been cut over.

The market in Bishop and in neighboring Owens Valley towns can not use more than perhaps 3,000,000 feet per annum, and is now being supplied with lumber from the Truckee country, shipped in by railroad, and by a small operator, whose mill is situated at the extreme southern end of the tract on Mammoth Creek.

The demand for lumber, cordwood, and mining timbers in the Nevada mining camps in the neighborhood of Tonopah and Goldfield is undoubtedly great enough to assure the sale of a large part of this timber if it were not for the fact that a 30-mile railroad spur to connect the timber with a branch of the Southern Pacific at Benton would have to be built at great expense in order to make this timber accessible.

Since the prospects for future mining activity in White, Inyo, and Panamint mountains are very bright, there is no doubt that this timber will always be in demand.



### Division into Tracts

This Forest has been divided into 7 blocks or tracts which have in turn been subdivided into compartments or logging chances (see map.) In the following description each block or compartment is treated separately. The tracts into which the Forest has been divided are:

	Total acreage
Hono Crater Tract	1,734 acres
Plateau Tract	4,688 acres
Canyon Tract	11,650 acres
Glass Creek Tract	9,629 acres
Deadman Creek Tract	10,326 acres
Dry Creek Tract	10,336 acres
Mammoth Tract	2,365 acres



## ESTIMATE SHEET

Form 578 b  
(Revised October, 1907)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Mono Crater (Mono Lake)

Timber Sale. Percentage Estimated 4.9

Sierra (N)

National Forest. System Used Strip

(Designation of sale)

Location of Tract See map (in Atlas)

Compartment 1

SPECIES — (Check List names).	Yellow pine type					TOTALS.
	Yellow pine					
Approximate diameter limits, if any	See report					
Average total height of trees	108					
Average diameter of trees	36					
Average number of trees per acre	4					4
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Average stand, feet b. m., per acre	3,587					3,587
Total stand, feet b. m.	9,215,000					9,215,000
Green cordwood, if any						5,000
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre						
Other material, total						
Seedlings less than 5 feet high, per acre	24.4					24.4
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Trees between 5 ft. high and 6 in. d. b. h. per acre	16.45					16.45
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Number trees per acre above 6 in. d. b. h. to be left	10.5					10.5
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Total number feet B. M. per acre to be left	720					

Total acreage within tract .....; of burns .....; cut-over land .....; of woodland containing nonmerchantable timber .....; merchantable forest .....  
 Estimated by ..... Title .....

TIMBER TO BE CUT.



## INSTRUCTIONS FOR PREPARING ESTIMATE.

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*Estimate.*—Always estimate the timber upon a definite cutting area recommended and shown on the map. An average for any large area of which this tract forms a part is insufficient. If uncertain conditions of sale or differences between the Forest officer and the applicant make it likely that the area recommended may be extended or reduced, then estimates for both the larger and the smaller areas are required; otherwise the cutting area should be fixed and estimated without reference to other lands. Where applications for adjoining timber are expected, and where the whole body could be most economically examined at one time, the work of estimating may with advantage include a large area, so that subsequent sales may be made without further examination. In such cases the estimate of the cutting area covered by the present application must be kept separate and an estimate and report submitted for each area which comprises a natural logging operation. The same methods should be followed in estimating large bodies of timber which are to be sold at once, when estimates should be made of each compartment or body of timber. Whenever the forest on different compartments requires different treatment or different stumpage prices, the details of the estimate and report should show the reasons.

When there is more than one forest type within a cutting area or compartment, the estimate must be based upon separate estimates in each type. When the application does not include all the merchantable timber on the cutting area, the Forest officer must submit an estimate of the merchantable timber which will be left after logging. This estimate should include seed trees, young timber which it is inadvisable to cut, and timber of sizes or species not desired by the applicant and which can properly be left.

The work of estimating should be done as carefully as conditions will allow. Only in the largest sales may less than 5 per cent of the total area be actually estimated, and wherever possible a much larger percentage should be taken. Estimates should be conservative, but overcuts should not ordinarily be more than 10 per cent of the estimated amount of the sale.—*The Use Book*, pp. 78 and 79.



## MONO CRATER TRACT

### Compartment I

#### Description

This tract is located in sections 2, 3, 10, and 15, T. 1 S., R. 27 E., N. B. M., and has a total acreage of 1,510 acres, of which 40 acres is cut-over land and 16 acres open land. It forms, as do all the compartments, a complete logging unit, being bounded on the east and north by the lands, largely cut over, belonging to the Mono Lake Railroad and Lumber Co., on the west by barren slopes of the Mono Crater, and on the south by desert.

Private interests.--There are no claims in this compartment.

Old cuttings.--Forty acres have been cut over in trespass on the eastern edge of this compartment (see map.) This cutting was done six or seven years ago by the old Bodie Lumber Co., of which the present Mono Lake Railroad and Lumber Co. is a successor.

Topography and surface.--The general exposure is to the northeast with an average elevation of about 7,600 feet. The surface is uniformly smooth and very easy to log. There are no streams within the compartment.

Soil.--The soil is a deep, very dry, pumice sand, which, since most of the precipitation is in the form of snow, is not liable to erosion.



Reproduction.--The reproduction on this compartment is at present, as it is over the whole tract, quite poor, but the adjoining cut-over lands belonging to the Mono Lake Railroad and Lumber Co. show that a very fine regeneration may be expected after cutting.

Character and condition of Forest.--The Forest is a pure stand of yellow pine of rather poor quality. Of the total stand 19 per cent is thrifty, 33 per cent is mature, 21 per cent is decadent, 21-1/2 per cent is cull, and 5-1/2 per cent is dead.

Accessibility.--Since this compartment adjoins the holdings of the Mono Lake Railroad and Lumber Co., and is within a mile of their mill, it is quite likely that the timber will be applied for in the near future. The costs of utilization are estimated to be as follows:

Logging	\$ 4.65
Milling	3.00
Mill yard expense	.50
Loading on cars	.50
Insurance, interest, and maintenance of mill	2.00
Total expense ready to ship	\$10.65

In case this timber is purchased by the Mono Lake Railroad and Lumber Co., it will most likely be sold in Bodie,



since the company has at this time no outside railroad connection except with Bodie. The cost of shipping to Bodie will amount to perhaps \$2, making the total cost in Bodie \$12.65. The market prices in Bodie range from \$28 to \$33 according to grade.

It is estimated that the cost of utilization of cordwood delivered in Bodie is \$4; the selling price in Bodie was, in the spring of 1907, from \$8 to \$12 according to grade.

This timber is worth at the present time at least \$5 per thousand feet for saw-timber and \$2 a cord for cordwood. The cordwood should be made from dead trees, trees unfit for saw-timber, tops, and large limbs.

#### Additional Information

The Mono Lake Railroad and Lumber Co. is composed of Pennsylvania capitalists led by Mr. C. E. Knox. They have purchased the mill, railroad, and holdings of the old Bodie Railway and Lumber Co., with the intention of supplying the market for lumber, mining timbers, and cordwood in the Nevada mining camps. They have had a railroad route connecting their present line with a branch of the Southern Pacific at Benton surveyed with the intention of building such a line. It is believed, however, that they have abandoned this scheme and are now waiting in hopes that such a line will be built by the Southern Pacific Company.



If such a line is ever built it will increase greatly the stumpage value of the whole Mono Lake Tract.

At present the Mono Lake Railroad and Lumber Co. are running a small sawmill of about 30,000 feet per day capacity and are selling their output in Bodie.

Labor for woods work is very hard to get and is very expensive in this part of California since the neighboring mines both in California and Nevada can afford to pay much higher wages than can lumbermen. Most of the timber work now being done for the Mono Lake Railroad and Lumber Co. is done by Piute Indians who receive from \$2 to \$3 per day wages. The working season is rather short, lasting from the middle of May until the first of November.

In case of the sale of the timber in this compartment to the Mono Lake Railroad and Lumber Co. the necessary scaling and woods work could be done by one Forest officer. The system of logging used at present and the one that would most likely be used in case this timber was purchased by the Mono Lake Railroad and Lumber Co., is by logging trucks with horses. The logs are loaded on the trucks and hauled through the woods to the nearest railroad spur and there yarded or loaded upon cars for shipment to the mill. The scaling should be done at these loading stations on the railroad, and since the trains run at stated intervals one man could very easily look after the scaling as well as the supervision of the cutting.



## Rules for Marking

In case of the sale of the timber on this compartment, the marking should be done by an experienced Forest officer, a technical man if possible, since a great deal must be left to the discretion of the officer marking the timber. The following suggestion should be followed in marking this timber.

Mark all dead trees and all trees that are spike-topped, crooked, badly fire-scarred, or injured in such a manner that it is improbable that they will live until the second cutting, unless these trees are needed for seeds or protection.

Mark all mature trees above an approximate diameter limit of 30 inches. It must be understood that this diameter limit should be varied wherever the conditions require, and should not be followed closely in any case.

At least 10 trees above 6 inches in diameter should be left per acre. If possible at least 4 of these 10 trees should be over 18 inches in diameter, in order to secure a good regeneration.

Be careful to leave seed trees in the vicinity of open places in order to encourage reproduction in these spots.

The brush resulting from lumbering should either be scattered over the ground or piled in large loose piles in the open places of the compartment. The danger of fire in this timber is very small, since there is no underbrush, very



little windfall, and no ground cover. If the brush is scattered over the ground it is believed it will materially aid in protecting the soil from rapidly drying out.

### Recommendations

If possible this timber should be sold. If the sale is not made now, or while the Mono Lake Railroad and Lumber Co. is operating, it will never be made. If this timber is sold to the Mono Lake Railroad and Lumber Co., they should be required to utilize all tops, large limbs, as well as trees unfit for saw-timber, as cordwood. They should also be required to give sufficient bond to insure the Government against any loss. If the timber is sold now a stumpage rate of at least \$5 for yellow pine saw-timber, and \$2 for cordwood should be obtained. The value of the timber in a few years' time will undoubtedly be much greater than the amounts stated above.

It is recommended that sheep grazing, now allowed in this Forest, be prohibited on the cut-over areas after the first year after logging. The present grazing of sheep seems to have no evil effect on the welfare of the Forest; on the contrary, the nearby cut-over lands which have been grazed to sheep constantly for the last eighteen years show a magnificent reproduction of yellow pine.



## ESTIMATE SHEET

Form 578 b  
(Revised October, 1907)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Mono Crater Tract (Mono Lake) Timber Sale. Percentage Estimated 4.2

Sierra (N) National Forest. System Used Strip

(Designation of sale)

Location of Tract See map (in atlas) Compartment 2

TIMBER TO BE CUT.

SPECIES—(Check List names).	Yellow pine	Yellow pine type				TOTALS.
Approximate diameter limits, if any-----		See report				
Average total height of trees-----	115					
Average diameter of trees-----	38					
Average number of trees per acre-----	12.4					12.4
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Average stand, feet b. m., per acre-----	10549					10549
Total stand, feet b. m.-----	2,362,000					2,362,000
Green cordwood, if any-----	1700					1700
Merchantable dead timber, feet b. m.-----						
Merchantable dead timber, cords, if any-----						
Other material, per acre-----						
Other material, total-----						
Seedlings less than 5 feet high, per acre-----	27.5					27.5
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Trees between 5 ft. high and 6 in. d. b. h. per acre-----	15.0					15.0
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Number trees per acre above 6 in. d. b. h. to be left-----	14.					14.
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Total number feet B. M. per acre to be left-----	4.700					4.700

Total acreage within tract-----; of burns-----; cut-over land-----;  
of woodland containing nonmerchantable timber-----; merchantable forest-----  
Estimated by I. F. Eldredge Title Forest Assistant

[OVER]



## INSTRUCTIONS FOR PREPARING ESTIMATE.

---

*Estimate.*—Always estimate the timber upon a definite cutting area recommended and shown on the map. An average for any large area of which this tract forms a part is insufficient. If uncertain conditions of sale or differences between the Forest officer and the applicant make it likely that the area recommended may be extended or reduced, then estimates for both the larger and the smaller areas are required; otherwise the cutting area should be fixed and estimated without reference to other lands. Where applications for adjoining timber are expected, and where the whole body could be most economically examined at one time, the work of estimating may with advantage include a large area, so that subsequent sales may be made without further examination. In such cases the estimate of the cutting area covered by the present application must be kept separate and an estimate and report submitted for each area which comprises a natural logging operation. The same methods should be followed in estimating large bodies of timber which are to be sold at once, when estimates should be made of each compartment or body of timber. Whenever the forest on different compartments requires different treatment or different stumpage prices, the details of the estimate and report should show the reasons.

When there is more than one forest type within a cutting area or compartment, the estimate must be based upon separate estimates in each type. When the application does not include all the merchantable timber on the cutting area, the Forest officer must submit an estimate of the merchantable timber which will be left after logging. This estimate should include seed trees, young timber which it is inadvisable to cut, and timber of sizes or species not desired by the applicant and which can properly be left.

The work of estimating should be done as carefully as conditions will allow. Only in the largest sales may less than 5 per cent of the total area be actually estimated, and wherever possible a much larger percentage should be taken. Estimates should be conservative, but overcuts should not ordinarily be more than 10 per cent of the estimated amount of the sale.—*The Use Book*, pp. 78 and 79.



## MONO CRATER TRACT

### Compartment II

#### Description

This compartment is located in the N 1/2 of Section 17, and the W 1/2 of Section 8 T. 1 S., R. 28 E., M. B. M., in the Inyo National Forest and has a total area of 224 acres, all of which are covered with merchantable timber. It is surrounded on the south and west by the holdings of the Mono Lake Railroad and Lumber Co., and on the north and east by desert.

There are no private interests within the compartment.

Topography and surface.--This compartment is located along the crest of a low ridge, the drainage being to the northeast and to the west. There are no streams within the compartment. The surface is smooth and easily logged.

Soil.--The soil is a deep, very dry pumice sand, which, since precipitation is largely in the form of snow, is not liable to be eroded.

Reproduction.--The reproduction is scanty but will without doubt be much better after cutting.

Character and condition of forest.--The yellow pine type covers the entire area. The stand is open and uniform with no ground cover or brush, and with very little windfall. Twenty-six and three-tenths per cent of the



total stand is thrifty, 43-5/10 per cent mature, 21-7/10 per cent decadent, 6-9/10 cull, and 1-6/10 dead. There is very little damage from fire, insects, or fungi, and the timber is quite sound, of very good merchantable height, and of a large average diameter.

#### Accessibility

This compartment is about 2-1/2 miles from the present site of the Mono Lake Railroad and Lumber Company's mill. This company proposes to continue their present logging railroad into this tract (see map), in which case the costs of utilization given in the description of Compartment 1, Mono Crater Tract will apply in this compartment. The stumpage value is, of course, the same, although this timber is perhaps of a better quality than the timber in Compartment 1.

#### Additional Information

Since this compartment adjoins the holdings of the Mono Lake Railroad and Lumber Co., it is quite likely that they will apply for this timber at the same time that they do for the timber on Compartment 1. It is not likely, however, that they will log both tracts simultaneously so that one set of Forest officers only will be required for the administration of the sale.

#### Rules for Marking Timber and for Administration

As recommended in the report on Compartment 1, the marking in this compartment should be done by an experienced



man. At least 14 trees above 6 inches in diameter should be left, and of these 14 at least 7 should be above 18 inches in diameter. All dead, spike-topped, fire-scarred, or otherwise damaged trees should be marked, except where these trees are needed for seed or protection. All mature trees that can be safely spared without reducing the number of seed trees left per acre should also be marked. Care should be taken to leave seed trees standing near the edges of the surrounding desert, and near open places within the compartment. Brush and other refuse should either be scattered over the ground or should be thrown in loose piles into the neighboring desert, or into open places within the Forest. All dead trees, trees unsuitable for saw-timber, tops, and large limbs should be converted into cordwood, since there is a large demand for this class of material in the neighboring towns.

#### Recommendations

This timber should be sold if possible to the Mono Lake Railroad and Lumber Company, since if it is held until that company is through logging, or has moved its mill, its future sale will be improbable. In the event of an application for the timber on this compartment, the timber on Compartment I should be advertised as well.

Trucks and horses will most likely be used should the Mono Lake Railroad and Lumber Company purchase this timber.



The reasons for recommending that brush be scattered or piled loosely in open places instead of being piled and burned are that the danger of fire is, owing to the fact that there is very little underbrush, ground cover, or windfall, extremely small, and that such a scattering of the brush over the ground will, it is believed, have a beneficial effect in retaining the soil moisture during the long dry season.

Sheep grazing should be prohibited in this compartment in the event of its sale, after the first year following the logging.



## ESTIMATE SHEET

Form 578b  
(Revised October, 1907)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Platteau tract (Mono Lake) Timber Sale. Percentage Estimated 4.7  
 Class (2) National Forest. System Used Strip  
 (Designation of sale)  
 Location of Tract See map (in atlas) Compartment

SPECIES — (Check List names).	Yellow pine type	Lodgepole pine	Yellow pine	Lodgepole pine		TOTALS.
	Yellow pine	Lodgepole pine	Yellow pine	Lodgepole pine		
Approximate diameter limits, if any		See report				
Average total height of trees	105	65	105	65		
Average diameter of trees	36	24	34	26		
Average number of trees per acre	8.	3	8	7.5		
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Average stand, feet b. m., per acre	7,022	30	0	1,000		
Total stand, feet b. m.	27,533,000	108,000	0	823,000		28,564,000
Green cordwood, if any						40,000
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre	Area of type 3625.5 acres		Area of type 823.2 acres			
Other material, total						
Seedlings less than 5 feet high, per acre	51.8	1.6	2.7	16.5		
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Trees between 5 ft. high and 6 in. d. b. h. per acre	15.3	1.3	2.4	29.8		
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Number trees per acre above 6 in. d. b. h. to be left	12.9	1.3	2.4	19.4		
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Total number feet B. M. per acre to be left	4,000	30	700	300		

Total acreage within tract 4585; of burns 200.9; cut-over land 38.4  
 of woodland containing nonmerchantable timber; merchantable forest 4445.7  
 Estimated by I. V. Hladsga Title Forest Assistant

[OVER]



## PLATEAU TRACT

### Description

This tract is located in sections 23, 24, 25, 26, 35, 14, 15, 22, 27, 34, and 33, T. 1 S., R. 27 E., and in sections 1, 3, 4, 5, and 2, T. 2 S., R. 27 E., W. B. M. It has a total area of 4,638 acres of which 38-4/10 acres are cut-over lands, and 200-9/10 are open land. It forms one logging unit.

It adjoins a large desert on the west and the holdings of the Mono Lake Railroad and Lumber Co. on the north and partly on the west, and National Forest land on the south and southwest. There are no private interests within the tract.

Old cuttings.--Forty acres along the northern boundary of this compartment have been cut over in trespass by the Bodie Railroad and Lumber Co., of which the present Mono Lake Railroad and Lumber Co. is successor. This cutting was done seven or eight years ago. The area was left with high stumps and is covered with slash which has now largely decayed. The reproduction on this cut-over area is very good, notwithstanding the fact that sheep have grazed over it ever since the timber was removed.

Topography.--This tract is located upon a large rolling plateau on the divide between Mono Lake and Owens River. There are no streams within the compartment. The surface is smooth and logging will be very easy.



Soil.--The soil is a deep, very easily dried-out pumice sand, which, owing to the fact that most of the precipitation occurs in the form of snow, is not very liable to be eroded.

Reproduction.--The reproduction of yellow pine on this tract is, in the yellow pine type, better than on most of the tracts. The reproduction in the lodgepole pine type both of yellow pine and of lodgepole is very poor.

### Character and Condition of Forest

The forest is composed of two types; yellow pine and lodgepole. The yellow pine type is located upon all except the moister sites, and occurs in an almost pure stand. The trees are quite sound and of good height growth, are clear boled, and of large average diameter. The stand is very open and there is no underbrush, very light ground cover, and very little windfall.

Of the total stand of yellow pine in this type 32 per cent is thrifty, 38 per cent mature, 20 per cent decadent, 7 per cent cull, and 1 per cent dead.

Of the total stand of lodgepole pine in this type 21 per cent is thrifty, 26 per cent is mature, 4 per cent decadent, and 49 per cent cull.

In the lodgepole pine type 30 per cent of the yellow pine is thrifty, 35 per cent mature, 23 per cent decadent, 5 per cent cull, and 7 per cent dead. Of the lodgepole pine



in this type, 15 per cent is thrifty, 23 per cent is mature, 1 per cent decadent, 59 per cent is cull, and 2 per cent dead. The stand in the lodgepole pine is 98 per cent lodgepole and 2 per cent yellow pine. The lodgepole pine trees are very short, limby, forked, and crooked, with very little merchantable saw-timber.

### Accessibility

This tract is about four miles from the present mill belonging to the Mono Lake Railroad and Lumber Co. This company has considered adding to its present railway a branch that will reach this tract. They will have to build from two to three miles of road in order to log this tract easily. There is very little likelihood of the sale of the timber on the tract until a railroad is put in, connecting this country with the Nevada mining towns.

Logging will be a very simple matter and should be very inexpensive, since the slopes are very gentle and the Forest is open with no underbrush, making it an ideal country for logging with trucks and horses, and for building railroad spurs.

If a railroad spur is built into this timber, the cost of logging would be practically the same as that given in the description of Compartment 1 of the Mono Crater Tract.

This tract should be logged toward the Mono Lake side, although the ridge dividing it from the Owens River watershed is so low that it might be logged toward Owens River.



## Additional Information

See paragraph "Additional Information" page 8.

## Suggestions for Marking Timber

Yellow pine type.--If this timber is sold within the next five years the following suggestions for marking should be followed with such modification as may, in the discretion of the Forest officer marking the timber, appear necessary.

The dead, spike-topped, badly fire-scarred trees, and trees unfit in any way for saw-timber, or which will not survive until the next cutting, should be marked. A rough minimum diameter limit of 32 inches will leave most of the thrifty trees. This limit should not be followed closely in any case. At least 13 trees above six inches in diameter should be left per acre for seed trees, and if possible, at least five of these trees should be above 18 inches in diameter. Where there is already a good reproduction present, it will not be necessary to leave so many seed trees.

No effort should be made in this type to save any lodgepole pine above 18 inches in diameter, unless it is very evident that no yellow pine reproduction will take the place of the trees which are removed.

Seed trees should be scattered as uniformly as possible over the whole area occupied by the type. A special effort should be made, by leaving quite a few trees along open spaces in the forest, to induce reproduction in these barren places.



Lodgepole pine type.--In marking this type only thrifty lodgepole pine trees below 20 inches in diameter should be left. Every effort should be made to encourage the reproduction of yellow pine in this type. This perhaps will be best done by leaving large yellow pine seed trees on the edges of, and wherever they occur, in, the type.

The lodgepole pine trees which will produce at least cordwood or mining timbers should be marked for removal. This will take in all dead, spiked-topped, forked, and fire-scarred trees. No living yellow pine in this type should be marked.

The brush resulting from logging in this compartment should be scattered loosely over the ground or where practicable, piled in loose piles in the large open places in and adjoining the tract.

Sheep grazing should be prohibited, in case the tract is cut over, after the first year after logging.

#### Recommendations

Since the timber on this tract is quite sound and free from injury, and since there is but little danger from fire, there is no necessity of its being sold within the next fifteen or twenty years.

It is not believed that the Mone Lake Railroad and Lumber Co. will, with its present lack of connection with the



Nevada Mining Camps, be able to handle this timber. It is recommended that this timber be sold for not less than \$5 per thousand feet board measure for yellow pine, \$2.50 per thousand feet for lodgepole pine, and \$2 per cord for cordwood, to be made from trees unfit for saw-timber and from tops and limbs.



## ESTIMATE SHEET

Form 578b  
(Revised October, 1907)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Glass Creek Tract (Hono Lake) Timber Sale. Percentage Estimated 5.2  
 Sierra (7) National Forest. System Used Strip  
 (Designation of sale)  
 Location of Tract See map (in atlas) Compartment 1

SPECIES—(Check List names).	Yellow pine type	Lodgepole	Fir	Lodgepole	pine type	TOTALS.
	Yellow pine	Lodgepole		Yellow pine	Lodgepole	
Approximate diameter limits, if any			See report			
Average total height of trees	105	65	120	105	65	
Average diameter of trees	40	26	44	26	26	
Average number of trees per acre	5.7	.3	.2	.1	4.6	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Average stand, feet b. m., per acre	5.084	80	300	300	305	
Total stand, feet b. m.	21,262,000	210,000	2,100,000	23,800	1,33,240	23,783,040
Green cordwood, if any						50,000
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre	Area of type 4237			Area of type 312 acres		
Other material, total						
Seedlings less than 5 feet high, per acre	18.6	.6	3.3	1.7	9.1	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Trees between 5 ft. high and 6 in. d. b. h. per acre	15.8	1.3	2.3	13.1	42.5	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Number trees per acre above 6 in. d. b. h. to be left	20.4	1.5	.8	9.8	35.2	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Total number feet B. M. per acre to be left	4800	30	150	300	350	

Total acreage within tract 6480; of burns 2250; cut-over land 1961  
 of woodland containing nonmerchantable timber 4319; merchantable forest 1961  
 Estimated by I. F. Eldredge Title Forest Assistant

[OVER]



GLASS CREEK TRACT  
(Mono Lake)

Compartment 1

Description

This compartment is located in Section 31, T. 1 S., R. 27 E., sections 4, 5, 6, 7, 8, 9, 17, 18, 19, 20, T. 2 S., R. 27 E., sections 12, and 13, T. 2 S., R. 26 E., and has a total area of 6,480 acres of which 1,961 acres are open lands. This compartment forms a complete logging unit and is bounded on the north by a desert, on the south and east by National Forest land, and on the west by a high ridge.

There are no private interests nor old cuttings within this compartment.

Topography--Surface.---The eastern half of this Compartment is comparatively level, with long rolling slopes, and shallow gulches. The western half lies on the east slope of a high ridge. This slope is, however, smooth and easily logged. Several large lava flows occur within the compartment, but these will not affect the logging in any way.

Soil.---The soil on the western half of the compartment is a deep, dry, loamy sand of much better quality than that on the eastern part of the compartment. The soil on the eastern half is a deep, very dry, pumice sand. Since the precipitation is largely in the form of snow, there is but little danger of erosion.



## Reproduction

Yellow pine type.--Reproduction in this type is poor, both in the yellow pine and in the lodgepole pine, and it is doubtful whether very good reproduction will result after cutting, since on a large part of this type the soil is very poor and very dry.

Lodgepole pine type.--Reproduction of yellow pine in this type is very poor. The regeneration of lodgepole pine is quite good, and should be encouraged by careful marking should any cutting be done.

## Character and Condition of the Forest

Both the yellow pine and the lodgepole pine types are found in this compartment. The lodgepole pine covers only 312 acres of the total acreage and is relatively unimportant.

Yellow pine type.--Of the yellow pine in this type 26.42 per cent is thrifty, 39.4 per cent mature, 19 per cent decadent, 12 per cent cull, and 3.2 per cent dead. The trees are of large diameter with a good merchantable height.

There are three species in this type, namely: Yellow pine, lodgepole pine, and red fir, of which yellow pine forms 92.3 per cent of the stand, lodgepole pine 3.7 per cent, and red fir 4 per cent.

The lodgepole pine is, as it is in all the compartments, of very poor quality, largely unmerchantable as saw-



timber and fit only for mining timbers and cordwood. The trees are short, limby, and forked, and show quite a good deal of damage from animals, insects, and fungi. The red fir in this type is of very good quality; the trees are quite high, with straight, clear boles, and of a large average diameter.

Lodgepole pine type.--The yellow pine in this type is of very poor quality. The trees are of small diameter, are very short boled, and very limby, and are largely unmerchantable. As a rule, the sites occupied by the lodgepole pine type are unfavorable for the growth of yellow pine. Of the total stand of yellow pine in this type only 5.3 per cent is thrifty, 39.3 per cent is mature, 4 per cent decadent, and 61.4 per cent cull.

#### Accessibility

This compartment can be logged either toward the Owens River side or toward the Mono Lake side, preferably the latter.

In the event of its sale to the Mono Lake Railroad and Lumber Company, which is very unlikely at present, it would most likely be logged to railroad spurs within the Compartment and shipped over the railroad to the present mill. In this event the cost of logging would be practicably the same as that given in the discussion of Compartment 1, Mono Crater Tract. The logging on a part of the tract would most likely be done with trucks and horses. On the western part



of the compartment, however, donkey engines would have to be used since the slopes are too steep for trucks.

The cost of logging by donkey engines is estimated to be \$4 instead of \$3.50, the estimated cost of logging with trucks. The cost of putting in railroad spurs from the present road to this compartment would be quite light, since the ground is comparatively level and no expensive cuts, fills, or trestles would be necessary.

#### Additional Information

See paragraph "Additional Information" page 8.

#### Rules for Marking

Yellow pine type.--In marking the timber in this type the general rules given for the other compartments should be followed. Much of the success of the marking must depend upon the discretion of the officer who does the marking. In this type a general minimum diameter limit of about 36 inches marks the line between mature and thrifty yellow pine trees. This diameter limit is suggested as a guide only, and should not under any circumstances be followed closely.

At least 20 yellow pine trees above 6 inches in diameter should be left per acre as seed trees. In marking the red fir all trees that will produce cordwood should be marked, as well as all mature trees above 36 inches in diameter except where these trees are needed for seed or protection.



If possible at least 6 red fir trees, above 6 inches in diameter should be left per acre for seed trees.

All lodgepole pine in this type, above 18 inches in diameter should be marked for removal except where it is evident that they will not be replaced by either yellow pine or fir regeneration.

Since there is very little underbrush and the ground cover is very light, danger of fire is quite small, and for this reason burning of brush should not be required. Brush should be scattered loosely over the ground.

#### Recommendations

It is decidedly unlikely that there will be an application for this timber for at least 10 years unless a railroad is built into this country, which is rather unlikely. This timber is certainly able to stand for this length of time without serious deterioration.

It is recommended that no effort be made to sell this timber at the present time since by holding it for 10 or 15 years stumpage value will be greatly enhanced. If possible this tract should be sold as a complete logging unit.



## ESTIMATE SHEET

Form 578b  
(Revised October, 1907)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Glass Creek Tract (Jomo Lake) Timber Sale. Percentage Estimated 3.2  
Sierra (17) National Forest. System Used Strip  
 (Designation of sale)  
Location of Tract See map (in atlas) Compartment 2

SPECIES — (Check List names).	Yellow pine		Type			TOTALS.	
	Yellow pine	Fir	Lodgepole pine				
TIMBER TO BE CUT.	Approximate diameter limits, if any-----		See report				
	Average total height of trees-----	100	120	65			
	Average diameter of trees-----	38	42	26			
	Average number of trees per acre-----	6.2	0.2	0.2		7.31	
		Per cent	Per cent	Per cent	Per cent	Per cent	
	Average stand, feet b. m., per acre-----	8447	628	37		9012	
	Total stand, feet b. m-----	23,369,000	1,732,000	112,000		27,112,000	
	Green cord- wood, if any--					20,000	
	Merchantable dead timber, feet b. m-----						
	Merchantable dead timber, cords, if any--						
	Other material, per acre-----						
	Other material, total-----						
	Seedlings less than 5 feet high, per acre-----	25.	2.6	.2			27.8
		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Trees between 5 ft. high and 6 in. d. b. h. per acre-----	21.	2.1	1.2			24.3	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	
Number trees per acre above 6 in. d. b. h. to be left-----	17.5	0.2	2.			19.7	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	
Total number feet B. M. per acre to be left-----	3,000	30	10			3040	

Total acreage within tract 3149.3; of burns 2500.; cut-over land 150.1  
 of woodland containing nonmerchantable timber 2411.2; merchantable forest 738.1  
 Estimated by L. P. Eldredge Title Forest Assistant

[OVER]



GLASS CREEK TRACT  
(Mono Lake)

Compartment II

Description

This Compartment is located in Sections 3, 10, 15, 16, 20, 21, 27, and 28, T. 2 S., R. 27 E., M. D. M., and is 3,149.3 acres in extent of which 158.1 acres are open land. A low ridge forms the northern and eastern boundary; Glass Creek the southern boundary and a large opening the western boundary of the compartment.

Topography

This Compartment has an average elevation of about 8,000 feet with a gentle western exposure. There are no streams within the Compartment. The slopes are even and logging will be easy and inexpensive.

Soil

The soil is a deep, loose, very dry pumice sand, not liable to be eroded.

Reproduction

The yellow pine type occupies the most of the Compartment. The trees occur in open stands with no underbrush and very little ground cover, and are of good merchantable height and fairly large average diameter.



Of the stand of yellow pine 31.4 per cent is thrifty, 31.5 per cent mature, 20.5 per cent decadent, 14.3 per cent cull, and 2.3 per cent dead.

Of the fir, largely white fir, (Abies concolor) 37.9 per cent is thrifty, 59.7 per cent mature, no decadent trees, 2.1 per cent cull, .3 per cent dead. This fir is of very good height and growth, and is quite large in average diameter.

Of the lodgepole pine 26.3 per cent is thrifty, 24.8 per cent mature, 1.3 per cent decadent, 43.8 per cent cull, and 3.8 per cent dead. The trees are very limby and largely unmerchantable except for cordwood and possibly mining timbers.

#### Accessibility

This Compartment may be logged either toward the Mono Lake side or toward Owens Valley. It is approximately 8 or 9 miles from the present mill site of the Mono Lake Railway and Lumber Company.

The Mono Lake Railroad and Lumber Company have considered building a mill at Glass Creek at the southern end of this Compartment and extending their present logging railroad through this compartment to the mill.

Both Compartments in the Glass Creek Tract can be logged very cheaply to such a mill. The cost would be approximately the same as those given in the description of Compartment 1 of the Mono Crater Tract.



## Rules for Marking

The dividing line between the thrifty and mature yellow pine occurs at a diameter of about 30 inches. All mature, dead, spike-topped and badly fire-scarred trees about this diameter should be marked except where it is evident that the trees should be left for seed or protection. If possible, at least 17 yellow pine trees above 6 inches in diameter should be left per acre for seed trees, and of this number at least 4 trees should be about 18 inches in diameter.

In marking the fir, all mature, spike-topped, badly fire-scarred trees above an approximate diameter of 30 inches should be marked for removal provided such trees are not needed for seed or protection. Lodgepole pine should be marked rather heavily wherever possible. All trees above 20 inches in diameter should be marked for cutting, except, of course, where it is evident that no pine regeneration will take the place to be left vacant.

## Recommendations

It is recommended that this tract be held for future cutting. This timber is now worth \$5 for yellow pine, \$3 for fir, \$2.50 for lodgepole pine saw-timber, and \$2 per cord for cordwood, and its value will undoubtedly be much increased by holding it until it is in actual demand.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Timber Sale. Percentage Estimated

Canyon Tract (Mesa Lake)

National Forest. System Used

3.5

(Designation of sale)

Location of Tract

Compartment

Strip

See map (attached)

SPECIES (Check List names).

Yellow pine type  
LodgepoleLodgepole pine type  
Yellow lodgepole

TOTALS.

Approximate  
diameter lim-  
its, if anyAverage total  
height of treesAverage diame-  
ter of treesAverage number  
of trees per  
acreAverage stand,  
feet b. m., per  
acreTotal stand, feet  
b. m.Green cord-  
wood, if anyMerchantable  
dead timber,  
feet b. m.Merchantable  
dead timber,  
cords, if anyOther material,  
per acreOther material,  
totalSeedlings less than  
5 feet high, per  
acreTrees between 5 ft.  
high and 6 in. d.  
b. h. per acreNumber trees per  
acre above 6 in.  
d. b. h. to be leftTotal number feet  
b. m. per acre to  
be left

Total acreage within tract 4259; of burns; cut-over land 711.8;  
of woodland containing nonmerchantable timber; merchantable forest 3548.2  
Estimated by Title

[OVER]



## CANYON TRACT (MOMO LAKE)

### Description

This tract has been divided into three Compartments each of which is a complete logging chance. The whole tract with the exception of Compartment I, must be logged toward Deadman Creek, where there are several good locations for sawmills.

### Compartment I

This Compartment is fully described in a previous report and the report is filed under the case designation of C. E. Knox, Timber Sale, Sierra (E).

### Compartment II

This Compartment is located in Sections 1, 12, and 13, T. 2 S., R. 27 E., and in Sections 5, 6, 7, 8, 18, and 19, T. 2 S., R. 28 E., M. D. M., and has a total area of 4,258 acres of which 711.8 acres are open land. There are no private claims nor old cuttings within this Compartment.

### Topography

The Compartment is situated on the south slope where the plateau breaks over into the valley of Deadman Creek. A part of the north end of the Compartment lies on the plateau.

The slopes are quite steep and the surface is much cut up by numerous deep gulches and box canyons running in a general northwest and southeast direction.



Owing to the fact that roads may be easily and profitably constructed in the beds of the gulches logging should not be expensive.

### Soil

The soil is a moderately deep pumice sand and although the slopes are quite steep there is not apt to be much erosion, since most of the precipitation is in the form of snow. However, care should be taken in a future cutting to leave a sufficient protection to the steep canyon sides.

### Reproduction

Yellow pine type.--The regeneration of yellow pine in this type is uniformly poor. What there is is mostly in the seedling stand and is scattered over the whole area. The reproduction of lodgepole pine is practically absent.

Lodgepole pine type.--In this type the amount of yellow pine reproduction is very small. It is not believed that it can be induced to occupy to any extent the locations now covered by this type. The reproduction of the lodgepole pine is also very poor; it occurs singly and in scattered clumps largely in the seedling stage.

### Character and Condition of the Forest

Two types are found in this Compartment, namely, yellow pine and lodgepole pine. The former covers 3,199.5 acres, and the latter 346.7.



Yellow pine type.--This type is composed of an open stand of yellow pine, lodgepole pine, and white fir, of which the yellow pine forms about 95 per cent, lodgepole pine 4 per cent, and white fir 1 per cent.

The yellow pine trees are of large average diameter, straight, quite tall, and of a fair merchantable height. There is absolutely no underbrush, very little windfall and dead timber, and a very light ground cover.

Of the total stand of yellow pine in this type, 34.8 per cent is thrifty, 38.5 per cent mature, 17.3 per cent decadent, 7 per cent cull, and 2.4 per cent dead.

The fir is found on northern exposures; the trees are quite large and sound and of a good clear height.

Lodgepole pine type.--The forest in this type consists of a pure stand of lodgepole pine, the trees are scrubby, short boled, forked and diseased, merchantable only as mining timber and cordwood.

#### Accessibility

This Compartment joins Deadman Creek, where, if this Compartment is ever logged, a sawmill will most likely be situated. This Compartment is about 55 miles north of Bishop, California, the nearest town, with no railroad connection.

#### Suggestions for Marking

Yellow pine type.--In marking in the yellow pine type, it will be found that a diameter of 36 inches will approximately



divide the mature from the thrifty trees. The diseased and defective trees, as well as the mature trees above 36 inches in diameter which can be safely spared, should be marked for cutting.

About 12 trees above 6 inches in diameter should be left per acre as seed trees; of these at least 5 should be larger than 18 inches in diameter. All of the lodgepole pine in this type above 18 inches in diameter which are not needed for seed or protection, should be marked. All fir fit for cordwood or saw-timber, above 30 inches in diameter which can be cut without danger of depleting the Forest should be marked for removal.

Lodgepole pine type.--All lodgepole pine trees above 20 inches in diameter which will produce either cordwood, mining timber or saw-timber, should be marked for cutting, with due care however, to see that no large gaps are left in the forest.

It is believed that the brush resulting from logging operations can with benefit to the forest be scattered over the area rather than piled and burned.

#### Recommendations

It is recommended, that, since the timber on this Compartment is sound enough to stand for at least 20 years more without a depreciation in quality, no active steps be taken to sell this timber unless a demand for it becomes such



that it must be supplied; and that no stumpage rates of less than \$5 per thousand feet for yellow pine saw-timber, \$3 per thousand feet for fir saw-timber, \$2.50 per thousand feet for lodgepole pine saw-timber, and \$2 per cord for cordwood to be made from dead trees, trees unfit for saw-timber, tops and large limbs, be considered.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Canyon Forest (Mono Lake) Timber Sale. Percentage Estimated 5-1  
 Sierra (R) National Forest. System Used Strip  
 (Designation of sale)  
 Location of Tract See map (in atlas)  
 Compartment 3

SPECIES (Check List names).	Yellow pine	Yellow pine type	Lodgepole pine	Fir	Lodgepole pine type	TOTALS.
Approximate diameter limits, if any			See report			
Average total height of trees	105	85	120	83		
Average diameter of trees	42	36	46	23		
Average number of trees per acre	7.5	.1	.1	11.		
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre	3400	40	660	300		
Total stand, feet b. m.	25,500,000	112,100	1,387,000	17,100		27,516,200
Green cordwood, if any						30,000
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre	Area of type 2747.2 acres		Area of type 37 acres			
Other material, total						
Seedlings less than 5 feet high, per acre	36.6	.71	2.71	8.		
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre	24.4	1.3	2.7	20.		
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left	13.9	.3	.8	14.5		
	Per cent of total 71	Per cent of total 75	Per cent of total 87	Per cent of total	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left	1500	10	200	360		

Total acreage within tract 3897.6; of burns 2200; cut-over land 1093.4  
 of woodland containing nonmerchantable timber 2804.2; merchantable forest  
 Estimated by L. F. Ridgeway Title Forest Assistant

[OVER]



## CANYON TRACT (MONO LAKE)

### Compartment III

#### Description

This Compartment is located in Sections 3, 10, 11, 13, 14, 15, 23, and 24, T. 2 S., R. 27 E., M. D. M., and is approximately 3,897.6 acres in extent, of which area 1,093.4 acres are open land. There are no private interests within the Compartment. A few trees were cut and converted into shakes about ten years ago. This old cutting is in the southern end of the Compartment and covers an area of perhaps one acre.

#### Topography

The northern three-quarters of this Compartment lies on a rolling plateau, the drainage of which is toward Owens River. The southern end lies on a south slope. The slopes in this part of the area are quite steep since there are many deep gulches running in a general northwest and southeast direction. The surface is smooth and there should be no difficulty in logging the tract.

#### Soil

The soil is a moderately deep, dry, loamy pumice sand which owing to the fact that most of the annual precipitation is in the form of snow and is not liable to be eroded, provided the cutting is not too severe.



## Reproduction

Yellow pine type.--The reproduction of yellow pine is, comparatively, very good. It occurs both singly and in small groups, largely in the seedling stage. Lodgepole regeneration is almost lacking. The reproduction of white fir is fairly good but is found only on northern exposures where the soil conditions are best.

Lodgepole pine type.--Reproduction of yellow pine in this type occurs only as scattered seedlings and saplings. Reproduction of lodgepole pine is fairly good but is mostly in the sapling stage. These saplings are found in groups in small openings.

## Character and Condition of the Forest

Both the lodgepole pine and the yellow pine types occur in this Compartment. The latter covers only a narrow strip of about 57 acres in extent and is relatively unimportant.

Yellow pine type.--This type is composed of three species, namely, yellow pine, lodgepole pine and white fir. White fir composes only 2 per cent of this stand, lodgepole pine 1.6 per cent, and yellow pine 96.4. The white fir trees are high, fairly clear boled, of large average diameter, and are remarkably free from defects.

Lodgepole is very small and limby and is largely defective.



Yellow pine occurs in an open stand of about 27 trees above 6 inches in diameter per acre, scattered uniformly over the whole Compartment. The trees are of large average diameter, of good merchantable height and fairly free from defects.

There is a very light ground cover, no underbrush, and very little windfall. Of the total stand of yellow pine 37.6 per cent is thrifty, 34.5 per cent is mature, 17.5 per cent is decadent, 9.4 per cent cull, and 1 per cent dead.

### Accessibility

(For distance from markets see paragraph page 3)

In the event of a sale of the timber on this Compartment, a mill will most likely be placed somewhere on Deadman Creek. Perhaps the best way to log this tract would be with a combination of donkey engines and logging trucks. The roads can be very easily and inexpensively built into the Compartment in the beds of the gulches. Logging donkeys can then be stationed at the heads of the gulches to yard the logs for loading upon the trucks.

It is estimated that the cost of logging in this manner would cost \$4 per thousand.

### Suggestions for Marking

An approximate minimum diameter limit in yellow pine type of 36 inches will leave most of the thrifty trees. This diameter limit is not, of course, to be followed closely or at all except as a guide.



The dead, spike-topped, fire-scarred trees and trees unfit for saw-timber should be marked for cutting, as well as the mature trees over 36 inches in diameter which can be safely spared. Care should be taken in the marking to leave a sufficient number of seed trees on the steep slopes of the south end of the Compartment to insure protection to these slopes, as well as a generous reproduction.

All white fir should be marked rather severely wherever it occurs. The diameter limit of about 30 inches should leave a sufficient number of seed trees to insure reproduction.

At least 18 yellow pine trees above 6 inches in diameter should be left per acre as seed trees. Of these, at least 4 should be above 18 inches in diameter. An effort should be made, by leaving large seed trees along the edges of openings, to induce a forest growth in these places.

The lodgepole pine should be marked to an approximate minimum diameter limit of 18 inches, but care should be taken to leave at least 14 trees above 6 inches in diameter per acre.

The brush should be disposed of as has been recommended for the other Compartments, that is it should be scattered loosely over the Compartment and left to add to the fertility of the soil and to aid in retaining the soil moisture during the long dry season.



### Recommendations

It is recommended that no effort be made to dispose of this timber at the present time, since it is sound enough to stand without serious deterioration for at least 20 years more. There is very little danger from fire since the ground cover is light and there is no underbrush or windfall.

If possible, this Compartment should be sold, when it is sold, as a whole, since the boundaries are natural ones and the Compartment forms a complete logging unit for a large sawmill.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Deadman Creek (Horse Lake) Timber Sale. Percentage Estimated 2.04  
 Sierra (R) National Forest. System Used Strip  
 (Designation of sale)  
 Location of Tract See map (Atlas)  
 Compartment 1

SPECIES (Check List names).	Yellow pine type		Lodgepole pine type		TOTALS.
	Yellow pine	Fir	Lodgepole	Yellow pine	Lodgepole
Approximate diameter limits, if any-----			See report		
Average total height of trees-----	75	115	65	75	65
Average diameter of trees-----	44	33	23	46	23
Average number of trees per acre-----	0.8	0.21	0.7	2	0.5
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre-----	9,057	980	118	1,600	743
Total stand, feet b. m.-----	28,000,000	1,613,000	412,000	160,000	74,000
					30,237,000
Green cordwood, if any-----					23,000
Merchantable dead timber, feet b. m.-----					
Merchantable dead timber, cords, if any-----					
Other material, per acre-----	Area of type 3491.2 acres			Area of type 100 acres	
Other material, total-----					
Seedlings less than 5 feet high, per acre-----	51.4	0.34	0.9	1.22	2.44
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre-----	29.73	0.07	2.12	.61	4.86
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left-----	15.	0.7		1.5	18.30
	Per cent of total 68.	Per cent of total 75.	Per cent of total 70.	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left-----	1,538	30	39	600	160

Total acreage within tract 5766.4; of burns 2587; cut-over land 1385.2  
 of woodland containing nonmerchantable timber 3581.2  
 Estimated by I. F. Eldredge Title Forest Assistant

[OVER]



## DEADMAN CREEK (MONO LAKE)

### Compartment I

#### Description

This Compartment is located in sections 2, 3, 4, 9, 10, and 11, T. 3 S., R. 27 E., and in sections 33, 34, and 35, T. 2 S., R. 27 E., M. D. M., and is approximately 5,966.4 acres in extent of which 2,385.3 acres are open land. Glass Creek forms the northern boundary of the Compartment, a low ridge the western, Dry Creek the southern and the Mono Lake road the eastern boundary. There are no old cuttings or private interests within the area.

#### Topography

This Compartment occupies a large rolling plain with a general exposure to the east. Deadman Creek flows through the northern part in a northeasterly direction. Several large open places ranging in extent from 20 acres to several hundred acres are scattered through the Compartment.

The average elevation is about 7,700 feet. The surface is very smooth and logging should be very simple and inexpensive.

The soil is a deep, loose, very dry pumice sand which, owing to the very gentle slopes and small annual rainfall, is not liable to be eroded.



## Reproduction

Yellow pine type.--The reproduction of yellow pine in this type occurs largely in the seedling stage and is quite good. The seedlings as well as the saplings are found in small groups and singly throughout the forest.

The reproduction of the other two species, fir and lodgepole pine, is very scanty and is confined in the case of the fir to northern exposures, and in the case of the lodgepole pine to locations where neither the fir nor yellow pine will grow.

Lodgepole pine type.--Reproduction of yellow pine in this type is almost lacking; what there is, occurs largely in the seedling form and is scattered uniformly over the whole area covered by this type.

Lodgepole pine regeneration is also quite poor, there being on an average only about 7 seedlings and saplings per acre in the type.

## Character and Condition of the Forest

Both the yellow pine type and lodgepole pine type are found in this Compartment. The former occupies 3,481.2 acres and the latter 100 acres.

Yellow pine type.--The forest is an open almost pure stand of yellow pine. There is no underbrush except along the edges of the desert where sagebrush is found. The ground cover is very light; consisting only of pine needles.



The yellow pine trees are tall, straight, fairly free from defects and are of large average diameter. They show very little damage from fire, insects, or fungi. Of the total stand of yellow pine in the yellow pine type 23.3 per cent is thrifty, 35.2 per cent mature, 24 per cent decadent, 15 per cent cull, and 2.5 per cent dead.

Of the fir in this type 28 per cent is thrifty, 45.5 per cent mature, 20 per cent decadent, 5.5 per cent cull, and 1 per cent dead. Of the lodgepole pine 25 per cent is thrifty, 32 per cent mature, 7 per cent decadent, 32 per cent cull, and 4 per cent dead.

Lodgepole pine type.--In this type the lodgepole pine forms 69.7 per cent of the total stand and the yellow pine 30.3 per cent. The lodgepole pine is small, limby, forked, and is unmerchantable except for cordwood and mining timbers.

The yellow pine in this type consists of a few large isolated trees scattered over the area covered by this type.

#### Accessibility

This Compartment is approximately 12 miles from the present location of the sawmill belonging to the Mono Lake Railway and Lumber Company and is about 50 miles from Bishop, California, the nearest town. There is no railroad connection with either place.



If this Compartment is ever logged the mill will most likely be situated somewhere on Deadman Creek since there is no permanent supply of water anywhere else in the Compartment. Logging should be a very simple matter since there are no steep slopes or rough surface.

#### Suggestions for Marking

Yellow pine type.--All the dead, spike-topped, badly fire-scarred trees, and trees unfit in any way for saw-timber should be marked in addition to the mature timber above an approximate diameter of about 36 inches. This diameter limit, of course, should be used only as a guide. At least 15 yellow pine trees above 6 inches in diameter should be left per acre as seed trees, of this number at least 4 trees should be above 18 inches in diameter.

An effort should be made to introduce yellow pine into the areas now treeless. This perhaps should be done by leaving large seed trees along the edges of these open places.

Lodgepole pine type.--In this type all trees that will cut cordwood, mining timbers, or saw-timber above 18 inches in diameter should be cut unless this would leave the area unprovided with a sufficient number of seed trees.

#### Recommendations

It is recommended that this timber be held for future cutting. Although it is largely mature, the danger



of fire is so small and the quality of the timber is so good that there is no doubt that it will stand without serious loss in quality for at least 20 years more.

The present value is not less than \$5 per thousand feet for yellow pine, \$3 per thousand feet for fir, \$2.50 per thousand for lodgepole pine, saw-timber, and \$2 per cord for cordwood.

Sheep grazing should be prohibited after logging has taken place.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Pendleton Creek (Homo Lake) Timber Sale. Percentage Estimated 7.00  
Sierra (2) National Forest. System Used Strip  
 (Designation of sale)  
 Location of Tract See map (In atlas)  
 Compartment 2

SPECIES (Check List names).	Yellow pine type					TOTALS.
	Yellow pine	Fir				
Approximate diameter limits, if any	See suggestions for marking in report					
Average total height of trees	125	120				
Average diameter of trees	40	46				
Average number of trees per acre	8.6	0.8				7.1
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre	10,000	1275				11,275
Total stand, feet b. m.	20,000,000	3,846,000				22,246,000
Green cordwood, if any						22,000
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre						
Other material, total						
Seedlings less than 5 feet high, per acre	18.7	7.5				26.2
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre	17.6	3.2				20.8
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left	12.1	1.7				20.8
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left	1,700	200				1,900

Total acreage within tract 4360; of burns 500; cut-over land 1,500  
 of woodland containing nonmerchantable timber 2,860; merchantable forest 1,500  
 Estimated by A. P. Eldredge Title Forest Assistant

[OVER]



## DEADMAN CREEK (MONO LAKE)

### Compartment II

#### Description

This Compartment is located in sections 25, 26, 35, 36, T. 2 S., R. 27 E., sections 30, 31, 32, T. 2 S., R. 28 E., Section 1, T. 3 S., R. 27 E., and in section 6, T. 3 S., R. 28 E., M. D. M. The total acreage within the boundary of the Compartment is 4,360 acres of which 1,500 acres are open land. Deadman Creek forms the north boundary of this Compartment, the Mono Lake road the west boundary, Dry Creek the southern boundary and the edge of the desert the eastern boundary. There are no old cuttings within the Compartment and the only private interests are a few, doubtless, invalid mining claims upon which no development work has been done.

#### Topography

This Compartment covers the slopes of a large mountain. There are no streams within the Compartment and the slopes, although in a good many places quite steep, are smooth and will no doubt be easily logged over.

The average elevation of the Compartment is about 7,500 feet.

The soil is of a moderately deep, very dry, loamy sand, which must be protected somewhat in order to escape erosion.



## Reproduction

The reproduction of yellow pine is only fair, and is divided about evenly between the seedling and sapling stage and occur both singly and in scattered groups.

The reproduction of white fir is limited and occurs in small groups on northern exposures and where the soil conditions are best.

## Character and Condition of the Forest

The yellow pine type covers the whole of this area. The stand is very open and the only underbrush is sagebrush and a little manzanita. The trees on the northern part of the tract near Deadman Creek are of very good quality. They are quite tall, very clear boled and of a large average diameter and the trees are quite sound and free from the effects of fire, insects and fungi. On the other part of the tract the yellow pine is not as good, there the trees are rather limby and are not as high.

The white fir is found mostly on the northern slopes of the mountain forming a center of the Compartment. The trees are quite large and sound.

## Suggestions for Marking

Marking above the diameter limit of about 38 inches should leave most of the thrifty trees. All dead spike-topped, fire-scarred, and trees unfit for saw-timber should



be marked for cutting except where such trees are needed as seed trees or for protection of the slopes.

At least 20 yellow pine trees above 6 inches in diameter should be left per acre as seed trees, of these, at least 4 should be above 18 inches in diameter.

In marking the white fir for cutting so much care need not be used in leaving seed trees since this species reproduces itself very easily where the conditions are at all favorable.

All fir trees that will produce cordwood or saw-timber, above an approximate minimum diameter limit of 30 inches should be marked for cutting.

#### Recommendations

It is not likely that an application for this timber will be made for a good many years and it is recommended that this timber be held for future cutting. It is now worth not less than \$5 per thousand feet for yellow pine, and \$3 per thousand feet for white fir, saw-timber, and \$2 per cord for cordwood.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

*Tray Creek Tract (Horse Lake)* Timber Sale. Percentage Estimated *4.75*  
*Sierra (21)* National Forest. System Used *Strip*  
 (Designation of sale)  
 Location of Tract *See map (In Atlas)*  
 Compartment *Whole tract*

SPECIES (Check List names).	Yellow pine type		Fir type		TOTALS.	
	Yellow pine	Fir	Yellow pine	Fir		
Approximate diameter limits, if any	See suggestions for marking					
Average total height of trees	100	115	100	115		
Average diameter of trees	32	40	34	36		
Average number of trees per acre	5.66 Per cent of total	7 Per cent of total	1.9 Per cent of total	0.4 Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre	8,990	1,191	1,818	33,570		
Total stand, feet b. m.	10,327,000	11,399,000	2,783,000	34,555,000		55,064,000
Green cordwood, if any						98,000
Merchantable dead timber, feet b. m.						112,464
Merchantable dead timber, cords, if any						
Other material, per acre	Area of type		Area of type			
Other material, total	6,713 acres		1,931 acres			
Seedlings less than 5 feet high, per acre	13.32 Per cent of total	3.15 Per cent of total	4 Per cent of total	32.9 Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre	10.95 Per cent of total	3.10 Per cent of total	3.9 Per cent of total	29 Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left	11.35 Per cent of total	1.9 Per cent of total	3.7 Per cent of total	39.6 Per cent of total	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left	1,825	176	832	1,776		

Total acreage within tract *10,336*; of burns *3200*; cut-over land *1,818*  
 of woodland containing nonmerchantable timber *9,344*; merchantable forest  
 Estimated by *L. F. Hildreth* Title *Forest Agent*

[OVER]



## DRY CREEK TRACT (MONO LAKE)

### Description

This tract is located in sections 1, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, and 24, T. 3 S., R. 27 E., and in Sections 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 22, and 30, T. 3 S., R. 28 E., M. D. N., and is 10,336 acres in extent, of which 1,818 acres are open sagebrush or desert land.

Since a demand for this timber within the next ten years is very unlikely the tract has not been divided into logging chances or compartments but has been examined and mapped as a whole. There are no private claims, with the possible exception of Section 16, which may or may not be State land, in the tract. There are no old cuttings.

### Topography

The western half of this tract is a rolling plain with long gentle slopes and shallow gulches. The eastern half is very much cut up with deep gulches and canyons. The northern boundary of the tract is formed by Dry Creek, the west boundary by a low ridge, the southern boundary by a ridge, and the eastern boundary by the desert.

During the dry season there is practically no water within the tract and there are only a few small streams during the winter.



The soil is a deep, coarse, loose, dry pumice sand, which, owing to the fact that most of the precipitation occurs in the form of snow, is not very liable to be eroded.

### Reproduction

The reproduction of yellow pine in the yellow pine type is not very good. It is about evenly divided between seedlings and saplings and occurs both singly and in small groups. The best reproduction of yellow pine is found on northern exposures and where the moisture conditions of the soil are best. Reproduction of fir in the yellow pine type is very poor; it is found in small scattered groups.

Fir type.---Considering the number of seed trees, the reproduction of yellow pine in this type is fair. The reproduction of fir is quite good and occurs in small groups.

### Character and Conditions of the Forest

Two types are found on this area, the yellow pine type and red fir type. The latter type occupies about 1,531 acres situated in the southwestern portion of the tract along the northern slope of the ridge forming the southern boundary. The yellow pine type occupies 6,713 acres over the rest of the tract.

Yellow pine type.---The yellow pine in this type occurs in a very open stand with an underbrush of sagebrush. There is very little ground cover.



Throughout the yellow pine stand there occur a great many small open places covered with sagebrush.

Of the total stand of yellow pine in this type 22.8 per cent is thrifty, 44.4 per cent mature, 24 per cent decadent, 6.7 per cent cull, and 2.1 per cent dead.

Red fir type.--This type occupies the locations on the northern exposures where the soil conditions are best. Mixed in with the red fir is also some white fir as well as yellow pine. The trees are tall, clear boled, and quite sound. There seems to have been very few forest fires, and what few there have been have done very little damage.

In this type of the total stand of fir 36 per cent is thrifty, 30 per cent mature, 29 per cent decadent, 3 per cent cull, and 1 per cent dead.

Of the yellow pine in this type 41 per cent is thrifty, 28.6 per cent mature, 18.8 per cent decadent, 9.6 per cent cull, and 2 per cent dead.

There is a little manzanita underbrush and a moderately deep ground cover.

### Accessibility

This tract is about 3 miles from the sawmill on Mammoth Creek now being operated by small lumbermen whose output is hauled about 48 miles over a very poor road to Bishop, California. Mono Mills is about 15 miles to the north, connected by an indifferent wagon road.



The method of logging that will most likely be used should this tract be logged will be that of logging trucks and horses, except in the eastern part of the tract where the slopes are so steep that donkey engines will most likely be necessary. There is no very good site for a mill within the tract as there is no permanent supply of water.

### Suggestions for Marking

Yellow pine type.--The use of an approximate minimum diameter limit of about 36 inches for yellow pine should leave most of the thrifty trees. The dead, spike-topped, fire-scarred trees should be marked for removal in addition to all the mature trees above 36 inches in diameter which can be safely spared. About 11 trees above 6 inches in diameter should be left per acre, and of these at least 5 trees should be above 18 inches in diameter.

In marking the fir, all dead, spike-topped, and fire-scarred trees which will cut at least cordwood should be marked for removal as well as the mature trees above 30 inches in diameter.

Fir type.--Very few trees per acre of yellow pine in this type can be safely marked; on an average of not more than 2 trees. Of course, all dead and defective trees should be marked, but every effort should be made to encourage the reproduction of yellow pine in this type.



Since the red fir seems to reproduce itself very freely a lower diameter limit than that used for pine may be used. Besides the dead and defective trees all mature trees above a diameter of 30 inches may be safely marked for removal.

The brush resulting from future cutting should be scattered over the ground or it may be piled loosely in large piles in the many open places of the forest.

Sheep grazing in the tract should be prohibited after any logging takes place.

### Recommendations

It is recommended that this timber be held for a future cutting. There can be no demand for this timber in the next ten years unless a railroad connecting the Nevada Mining Camps with this territory is put in.

The present value of the timber is as follows:  
Yellow pine saw-timber \$5 per thousand feet, red fir saw-timber \$3 per thousand feet, cordwood, to be made from dead and defective trees, tops and limbs \$2 per cord.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Manoth Tract Sierra (2) Timber Sale. Percentage Estimated 6.3  
Location of Tract (Designation of sale) National Forest. System Used Strip  
one map (in atlas) Compartment 1

SPECIES (Check List names).	Yellow pine		Fir		Lodgepole pine		TOTALS.
Approximate diameter limits, if any-----							
Average total height of trees-----	110		120		65		
Average diameter of trees-----	39		40		28		
Average number of trees per acre-----	1.8		6.8		0.7		9.1
	Per cent of total		Per cent of total		Per cent of total		Per cent of total
Average stand, feet b. m., per acre-----	3,000		13,250		150		13,410
Total stand, feet b. m.-----	1,934,000		9,339,000		94,000		11,367,000
Green cordwood, if any-----							6,300
Merchantable dead timber, feet b. m.-----							
Merchantable dead timber, cords, if any-----							
Other material, per acre-----							
Other material, total-----							
Seedlings less than 5 feet high, per acre-----	2.74		13.75		.39		22.11
	Per cent of total		Per cent of total		Per cent of total		Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre-----	4.05		24.39		4.41		32.85
	Per cent of total		Per cent of total		Per cent of total		Per cent of total
Number trees per acre above 6 in. d. b. h. to be left-----	1.54		18.9		3.54		23.98
	Per cent of total		Per cent of total		Per cent of total		Per cent of total
Total number feet b. m. per acre to be left-----	930		2,820		60		3,810
			7,505				100.0

Total acreage within tract-----; of burns-----; cut-over land-----;  
of woodland containing nonmerchantable timber-----; merchantable forest-----  
Estimated by I. F. Eldredge Title Forest Assistant

[OVER]



## MAMMOTH TRACT

This tract is situated on the southern slope of a spur from the main Sierras. The timber is tributary to the Owens River Valley, and can not be logged profitably in any other direction. The timber tract has been divided into three Compartments. In making these Compartments, the idea was to make each Compartment a complete logging unit with natural boundaries and of such a size that the timber might readily be sold to small operators.

### Compartment I

This Compartment is located as follows: S. 1/2 of SW 1/4 of Sec. 22, W. 3/4 of Sec. 27, W. 1/4 of Sec. 34, and the SW 1/4 of the SE 1/4 of Sec. 34, T. 3 S., R. 27 E., M. D. M. The total acreage within the boundary of the Compartment is 760.5 acres of which 109.2 acres are open land.

Within the Compartment there are no private claims, although private land adjoins the Compartment on the south. There has been more or less timber cut in trespass about eight years ago along the extreme southern part of the area. The man who did this cutting was then the owner of the Mammoth sawmill, and claimed that it was done in his absence by a lessee.

The cut-over area is quite small.



## Topography

This Compartment is bounded on the east, north, and west by a ridge; on the south the boundary line is the boundary of adjacent private holdings. The Compartment occupies one large cove in which the drainage is to the south. There are no streams within the Compartment. The surface is fairly smooth, except near the top of the ridges forming the boundary line where there is more or less outcropping rock.

The soil is rather thin, dry, loamy sand, and owing to the thinness of the soil and the steepness of some of the slopes, some care in marking will be necessary to prevent erosion.

## Reproduction

Considering the number of seed trees per acre of yellow pine on this Compartment, the reproduction of yellow pine is quite good. It occurs largely in the sapling stage in small, scattered groups. There is no doubt of a generous reproduction after cutting. The reproduction of red fir is quite good. It occurs both in the seedling and in the sapling stages, and is found generally in small, scattered groups. The reproduction is quite healthy and seems to be making a rapid growth.

The reproduction of lodgepole pine is confined to the edges of small asceris and to openings in the forest. It is rather scanty.



## Character and Condition of Forest

The red fir type occupies the whole of this Compartment. Of the total stand 20.5 per cent is yellow pine, 71.9 per cent is fir, and 7.6 per cent is lodgepole pine.

Red fir.--Of the total stand of red fir, 29.7 per cent is thrifty, 33.4 per cent is mature, 29.3 per cent is decadent, 6.7 per cent is cull, and .6 per cent is dead. The trees are very tall, and have a very good merchantable height. They are of large, average diameter, and are quite sound, showing very little damage from fire, insects, or fungi.

Yellow pine.--Of the total stand of yellow pine 33.3 per cent is thrifty, 26.3 per cent is mature, and 22.5 per cent is decadent, 14.2 per cent is cull, and 4.6 per cent dead. The trees are not as high as are the red fir, nor have they as good a merchantable height. The average diameter, however, is but very little smaller and the trees are quite sound and will yield lumber of good quality.

Lodgepole pine.--The lodgepole pine, as is all the lodgepole pine at this elevation on the east slope of the Sierras, is of very poor quality. The trees are short, limby, crooked, forked, and generally a good deal damaged by snow slides, insects, and fungi.

## Additional Information

Compartment I of the Mammoth Tract will be most likely the first one for which application will be submitted,



since it would be logged to the Mammoth sawmill. This mill is about a mile and one-half from the center of the tract, connected, except for about half a mile, with the mill by a fairly good logging road. The adjacent private lands have been largely cut-over, except for a narrow strip, and the present operators of the Mammoth mill will most likely desire to log this timber while logging their own.

Mr. White Smith, an Attorney of Bishop, California, who claims to be acting for an association of business men in that town, has submitted an informal application for the timber on this area. He does not care, however, to give for this timber more than \$2, or possibly \$3 at the most, claiming that a higher price would not allow him enough profit to warrant the initial expense. However, he claims that this association of business men of Bishop of which he is the head, desires to purchase this timber only in order to keep the selling price of lumber in Bishop and in the Owens River Valley at a reasonable figure, and not to make a large profit from the sale of the timber. Although the men who compose this association are reputable business men of good financial standing, it is believed that in the event of a sale of this timber to them, a bond sufficiently large to insure the Government from loss of any kind should be required.

The present mill on Mammoth Creek is a very small, ramshackly affair, not able to saw, under the best conditions, more than 10,000 feet per day.



It is the intention to enlarge and improve this mill so that about 25,000 feet B. M., can be cut per day. The mill has already been purchased by Mr. White Smith, who is at present associated with a New York lumberman named Bradley in sawing what remains of the timber on the private lands adjoining the mill.

The logging is being done now with trucks and horses and under the present management, is very slow and expensive. It probably costs \$5 per thousand feet to put the logs in the mill yard. Under efficient management this cost should be reduced to \$4. The cost of sawing is now of course, quite high, but with a new mill it should not be more than \$2.50 per thousand feet. The largest expense connected with the utilization of timber in this neighborhood is that of transportation to market. The mill is probably 48 miles from Bishop, and connected only by a wagon road which in places is almost impassable. It is claimed by Mr. White Smith that the cost of transportation to market is \$18. This figure, I believe, is perhaps a little high, although it could not be done for much, if any, less than \$15 per thousand. The total cost of the lumber delivered in Bishop is estimated to be \$24, exclusive of stumpage. The average selling price for lumber in Bishop is at present about \$35 per thousand feet B. M.

Should this sale be made, one Forest officer should be able to both scale the timber and supervise the cutting, since



to scale the timber alone will not occupy more than one-half of his time, and yet would be enough to keep him from doing much other work.

### Suggestions for Marking

In marking yellow pine on this compartment, it will be found that a minimum diameter limit of about 36 inches will leave most of the thrifty trees. This diameter limit should not be followed except as a guide. All the dead, spike-topped and fire-scarred trees should be marked for removal, as well as those mature trees above 36 inches in diameter, which can be safely spared. On an average, not more than two yellow pine trees per acre can be safely marked.

Red fir.--In marking red fir for removal, all dead, spike-topped and badly fire-scarred trees, which will yield at least cordwood, should be marked, as well as all mature trees which can, without danger of depleting the Forest, be removed. If possible, at least 17 fir trees above 6 inches in diameter should be left per acre for seed trees and of these at least 4 trees should be above 16 inches in diameter. The fir should be marked rather severely, since the reproduction now present of that species is quite good.

Lodgepole pine.--It is doubtful whether much of the lodgepole pine can be marked for removal, since it is so largely unmerchantable. However, all merchantable trees above an



approximate minimum diameter limit of 18 inches should be marked for removal, unless these trees are needed for seed or slope protection.

### Recommendations

Since this Compartment is not so open and since there is considerable slash in adjoining cut-over lands, there is more or less danger from fire, and for that reason it would perhaps be well to have the brush piled and burned, instead of scattering loosely over the ground as has been recommended for other compartments.

While this timber is well able to stand for a good many more years without danger of deterioration, it is believed that it should be sold to supply the demand for lumber in the Owens Valley towns. This timber is worth at the present time \$4 per thousand feet, B. M., for saw-timber of all species and \$2 per cord for cordwood. Since the purchasers will, undoubtedly, sell it in the Owens Valley towns, at prevailing lumber prices, it is believed that the above-mentioned stumpage prices should be obtained.

If it were possible to insert in the contract a clause binding the purchasers to give the settlers and the ranchers in Owens Valley the benefit of a low stumpage rate, it would perhaps be well to sell the timber for less than its full market value. However, it is not likely that such a clause could be inserted and be legally binding or that the purchasers would live up to the clause if it were inserted.



Grazing should be prohibited in the cut-over area after logging, and every effort should be made to protect the tract from possible forest fires which, since there are large numbers of summer campers in the vicinity, are likely to occur during the dry season.



## Compartment II

### Description

This Compartment is located as follows: S. 1/2 of SW 1/4 Sec. 23, N. 1/2 of SW 1/4 Sec. 26, E. 1/2 of NE 1/4 Sec. 27, and NE 1/4 of SE 1/4 Sec. 27 T. 3 S., R. 27 E. The total acreage within the boundary of the Compartment is 419 acres all of which is covered by merchantable forest. There are no private interests or old cuttings within the Compartment. The Compartment forms a complete logging unit and the boundaries are natural ones. It is located in a large cove in which the drainage is toward the south.

### Topography

The slopes are moderately steep with an exposure to the south, east and to the west. The surface is, except near the top of the ridge where there is more or less rock outcropping, smooth and easily logged over. There are no streams within the Compartment. The soil is of medium depth and is a dry, loamy sand which should be protected somewhat in order to avoid erosion.

### Reproduction

The reproduction of yellow pine in this Compartment is not very good. On an average there are only about eight seedlings and saplings of this species per acre. The reproduction of red fir is somewhat better, though not by any



means good. Reproduction of red fir occurs largely in the seedling form in small scattered groups as well as singly.

### Character and Condition of the Forest

The yellow pine type occupies the whole area in this Compartment. Of the total merchantable stand, yellow pine forms 50.5 per cent, red fir 43.7 per cent, and lodgepole pine 5.8 per cent. The stand is rather open and there is very little underbrush, except a little manzanita, which occurs in scattered clumps.

Of the merchantable yellow pine 22.1 per cent is thrifty, 36.9 per cent is mature, 27.6 per cent decadent, 11.9 cull and .5 per cent dead. Of the merchantable fir 15.53 per cent is thrifty, 22.8 per cent is mature, 51.9 per cent is decadent, and 8 per cent cull while 2 per cent dead. Of the lodgepole pine, 80 per cent is thrifty, 4 per cent is mature, 0 per cent is decadent, 16 per cent cull, and 0 per cent dead.

The quality of this timber is very good, and there seems to be but little damage from fire, insects, and fungi.

### Accessibility

This Compartment is about 1-1/2 miles from the Mammoth sawmill and is connected with the sawmill, except for about 1/4 of a mile, by a very good wagon road. (For distances from markets, costs, etc., see pages 56 and 57.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Hannoth Tract

Sierra (2)

Timber Sale. Percentage Estimated 2.2

National Forest. System Used Strip

Location of Tract 100 map (In atlas)

Compartment 2

SPECIES (Check List names).	Yellow pine type					TOTALS.
	Yellow pine	Pine	Lodgepole pine			
Approximate diameter limits, if any		See report				
Average total height of trees	115	130	65			
Average diameter of trees	36	40	22			
Average number of trees per acre	3.20	3.20	0.2			10.75
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre	8,410	11,366	4.			19,790
Total stand, feet b. m.	3,324,000	4,762,000	1,676			8,287,676
Green cordwood, if any						4,190
Merchantable dead timber, feet b. m.						
Merchantable dead timber, cords, if any						
Other material, per acre						
Other material, total						
Seedlings less than 5 feet high, per acre	4.	12.4	2.3			19.2
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre	4.2	6.8	0.4			11.4
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left	4.4	6.20	1.30			12.40
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left	2,034	1,672	120			3,826

Total acreage within tract 419; of burns; cut-over land 419;  
of woodland containing nonmerchantable timber; merchantable forest  
Estimated by I. F. Eldredge Title Forest Assistant

[OVER]



### Suggestions for Marking Timber

All dead, spike-topped, and fire-scarred trees should be marked for removal, as well as those mature trees above 16 inches in diameter which in the discretion of the Forest officer who does the marking can be safely spared. This will amount to, on an average, of not more than five yellow pines, five firs, and one lodgepole pine per acre.

Care in marking to leave a sufficient number of trees standing on the steep slopes will be very necessary in order to prevent danger from erosion and snowslides.

In marking the lodgepole pine everything above 16 inches in diameter should be marked for cutting except where such trees will be needed for slope protection.

### Recommendations

It is recommended that the Compartment be withheld from sale until Compartment I of this tract has been logged over.

At present the stumpage prices recommended for Compartment I will hold for this Compartment although the stumpage values are almost certain to be increased by withholding the timber from sale for five or six years.



## ESTIMATE SHEET

Form 578b  
(Revised January, 1908)UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

*Manoah tract* Timber Sale. Percentage Estimated *2.4*  
*Sierra (2)* National Forest. System Used *Strip*  
 (Designation of sale)  
 Location of Tract *See map (In atlas)*  
 Compartment *2*

SPECIES (Check List names).	Yellow pine type					TOTALS.
	Yellow pine	Fir				
Approximate diameter limits, if any-----			See report			
Average total height of trees-----	265	130				
Average diameter of trees-----	40	40				
Average number of trees per acre-----	2.4	2.2				2.4
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Average stand, feet b. m., per acre-----	11,068	2,610				13,678
Total stand, feet b. m.-----	12,771,000	4,480,000				17,251,000
Green cordwood, if any-----						11,500
Merchantable dead timber, feet b. m.-----						
Merchantable dead timber, cords, if any-----						
Other material, per acre-----						
Other material, total-----						
Seedlings less than 5 feet high, per acre-----	2.78	6.22				12.00
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Trees between 5 ft. high and 6 in. d. b. h. per acre-----	4.73	4.27				9.00
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Number trees per acre above 6 in. d. b. h. to be left-----	4.57	3.43				8.00
	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total	Per cent of total
Total number feet b. m. per acre to be left-----	2,477	781				3,258

Total acreage within tract *1,104*; of burns *2208*; cut-over land *11.4*  
 of woodland containing nonmerchantable timber-----; merchantable forest *1154.0*  
 Estimated by *I. F. Eldredge* Title *Forest Assistant*

[OVER]



## NAMMOTH TRACT

### Compartment III

#### Description

This Compartment is located as follows: Sec. 23, W 1/2 of W 1/2, Sec. 25 E 1/2 of Sec. 26, N. 1/2 Sec. 25, SW 1/4 of SW 1/4 of Sec. 13, T. 3 S., R. 26 E., M. D. M. The total acreage within the boundary of the compartment is 1,186 acres of which 31.4 acres are open sagebrush land and desert. There are no private interests or old cuttings within the compartment, nor are there any permanent streams.

The compartment forms a natural logging unit, and is bounded on all sides except the south, by a high ridge.

#### Topography

This Compartment occupies a long deep cove in which the slopes are fairly steep, and, in the southeast portion of the compartment, rather rough. In the remainder of the compartment the slopes are smooth and generally free from outcropping rock. Logging will not be difficult nor expensive. The drainage is to the south.

The soil is a rather thin, dry, loamy sand which, unless it is protected more or less, may suffer from erosion.

#### Reproduction

The reproduction of yellow pine in this compartment is rather scanty. What there is, is divided equally between



the seedling and the sapling stages and occurs scatteringly over the whole area.

The reproduction of red fir is confined to the higher elevations on the west side of the compartment. It is perhaps a little better than that of yellow pine, though not scattered over so large an area.

#### Character and Condition of the Forest

The Forest is of the yellow pine type. Of the total stand of merchantable timber in the Compartment, 71.2 per cent is yellow pine and 28.8 per cent is red fir. Of the yellow pine 18.1 per cent is thrifty; 44.4 per cent is mature; 27.1 per cent is decadent; 8.4 per cent is cull, and 1.9 per cent is dead. Of the red fir, 13.2 per cent is thrifty; 22.4 per cent is mature; 52 per cent is decadent; 8.4 per cent is cull, and 4 per cent is dead.

The yellow pine on the ridge forming the eastern boundary of the tract is far below in quality the yellow pine on the rest of the area, due to thinner soil and to poorer moisture conditions.

#### Accessibility

This timber is about four miles from the Mammoth sawmill and could not be logged to this mill with profit. (For additional information see pages )

#### Suggestions for Marking

In marking this timber especial care must be taken to protect, from erosion, the steep slopes on the east side



of the compartment, since here the soil is thin and the stand is so open that erosion of the soil is very apt to follow a severe cutting. Every effort should be made, even at the expense of leaving a large number of merchantable trees per acre, to insure a reproduction on these slopes. On the west slope of the compartment, the stand is a little more dense and more trees can be marked for removal.

The red fir should be marked more severely, as a rule, than should the yellow pine since it seems to reproduce itself in the locations where it is found very freely. An approximate minimum diameter limit of 36 inches will leave standing most of the thrifty trees. In no case, however, should this diameter limit be followed closely.

Since there seems to be but little reason to anticipate much danger from forest fires and since the soil is badly in need of protection from drying out, it is recommended that the brush resulting from logging be scattered loosely over the ground instead of being piled and burned.

#### Recommendations

This timber should be held until the timber on compartments 1 and 2 have been logged over. The stumpage value of the timber is at present about \$4 per thousand feet B. M for saw-timber of all species, and \$3 per cord for cordwood.



## Pinon

The pinon forms a very open forest composed of trees averaging perhaps 15 feet in height and 16 inches in diameter. The individual trees are crooked, generally forked, and covered with branches from top to ground. They are commercially valuable only as fuel.

## Owens River Canyon

This timber tract is 20 miles from Bishop, California, over a rough wagon road. The mine of the Casa Diablo Gold Mining Company is from 3 to 5 miles distant from the tract. This company has already purchased a million feet of the yellow pine from the tract, and if the mine is a success, will no doubt desire to make further purchases. There are several other gold mines in the immediate vicinity of the tract, which will be dependent upon this Forest for the future supply of mining timbers and fuel.

## Recommendations

1. The yellow pine timber on this tract should be withheld from sale except to supply the local demand for mining timbers, building material and fuel wood.
2. The pinon should be sold to whomsoever desires it.
3. Complete utilization of each tree cut should be practiced. If the purchaser of the timber does not convert



the tops and branches into cordwood, a separate purchaser should be found for this material, or if this is impossible, the material should be disposed of through free use.

4. The small amount of refuse remaining after utilization should be scattered loosely over the ground and left to serve as a protection to the future seedlings.

5. All sheep grazing should be prohibited on the tract as soon as any part of it has been logged over.

The other timber tracts are at present not commercially important, since nearly all of them are inaccessible. Small sales of cordwood and free-use business will probably be the extent of the utilization on the small tracts.



Other bodies of timber on the Sierra (E) and Inyo National Forests.

As stated above, the timber on the watershed of Mono Lake, Deadman, and Mammoth creeks forms about 85 per cent of the total merchantable stand on the Sierra (E) and Inyo Forests. The rest of the merchantable timber is found in T. 5 S., R. 28 E., and in small bodies scattered along the mountain range forming the western boundary of the Sierra (E) Forest. These bodies of timber are found at a high altitude and are as a rule inaccessible.

The timber tract in T. 5 S., R. 28 E., covers an area of about six square miles in which are found many blanks or open spaces, ranging from 1 to 10 acres in extent. The stand is composed of a body of yellow pine surrounded by pinon pine. The yellow pine forest is very open, and is composed of rather short branchy trees of an average diameter of about 32 inches.

The total stand of merchantable timber in this yellow pine forest is about 14 million feet B. M., of which not more than 5 million feet should be cut at the present time.

The reproduction present on the tract is very light, and judging from the condition of nearby lands, cut over 10 years ago, not much of a regeneration can be expected after



logging, unless a large number of carefully chosen seed trees are left upon the tract. The seed trees will be more or less subject to danger of being wind thrown.